

What is claimed is:

1. A pseudotyped retrovirus comprising recombinant RNA associated with a retroviral core surrounded by a lipid bilayer having disposed therein a glycoprotein comprising a modified *O*-glycosylation region, the recombinant RNA comprising (i) a nucleotide sequence defining a selected biomolecule intended for delivery to a target cell, and (ii) retroviral control elements for packaging, reverse transcription and integration of the retrovirus into a target cell.
2. The pseudotyped retrovirus of claim 1 wherein the retroviral core and control elements are from Moloney murine leukemia virus (Mo-MuLV).
3. The pseudotyped retrovirus of claim 3 wherein the retroviral core and control elements are from a lentivirus.
4. The pseudotyped retrovirus of claim 1 wherein the lentivirus is feline immunodeficiency virus (FIV), human immunodeficiency virus (HIV), simian immunodeficiency virus (SIV) or equine infectious anemia virus (EIAV).
5. The pseudotyped retrovirus of claim 1 wherein the glycoprotein is a filovirus glycoprotein.
6. The pseudotyped retrovirus of claim 1 wherein the selected biomolecule is a protein.
7. The pseudotyped retrovirus of claim 1 wherein the selected biomolecule is a bioactive RNA.
8. The pseudotyped retrovirus of claim 1 having a transduction efficiency into target cells of at least 2-fold higher than a retrovirus pseudotyped with the wild-type glycoprotein.

9. A pseudotyped retrovirus comprising recombinant RNA associated with a retroviral core surrounded by a lipid bilayer having disposed therein an Ebola glycoprotein comprising a modified *O*-glycosylation region, the recombinant RNA comprising (i) a nucleotide sequence defining a selected biomolecule intended for delivery to a target cell, and (ii) retroviral control elements for packaging, reverse transcription and integration of the retrovirus into a target cell.
10. The pseudotyped retrovirus of claim 9 wherein the Ebola glycoprotein contains a deletion of nucleotides 309 to 489 in SEQ ID NO:1.
11. The pseudotyped retrovirus of claim 10 wherein the retroviral core and control elements are from Mo-MuLV retrovirus.
12. The pseudotyped retrovirus of claim 10 wherein the retroviral core and control elements are from a lentivirus.
13. A pseudotyped retrovirus pseudotyped with a glycoprotein comprising a modified *O*-glycosylation region, the pseudotyped retrovirus having a transduction efficiency into a target cell of at least 2-fold higher than a retrovirus pseudotyped with the wild-type glycoprotein.
14. A recombinant virus producer cell comprising *gag*, *pro* and *pol* nucleotide sequences and a nucleotide sequence encoding a glycoprotein comprising a modified *O*-glycosylation region.
15. The recombinant virus producer cell of claim 14 wherein the glycoprotein is an Ebola glycoprotein containing a deletion of nucleotides 309 to 489 in SEQ ID NO:1.
16. The recombinant virus producer cell of claim 15 which is a NIH 3T3 cell, COS cell, Madin-Darby canine kidney cell, human embryonic 293T cell or any cell derived therefrom.

17. A method for making a pseudotyped retrovirus comprising supplying a recombinant RNA to the recombinant virus producer cell of claim 12, wherein recombinant RNA comprises (i) a nucleotide sequence defining a selected biomolecule intended for delivery to a target cell, and (ii) retroviral control elements for packaging, reverse transcription and integration of the retrovirus into a target cell, under conditions such that pseudotyped retrovirus is produced.
18. The method of claim 17 wherein supplying the recombinant RNA to the producer cell comprises introducing a DNA encoding the recombinant RNA into the producer cell.
19. The method of claim 17 supplying the recombinant RNA to the producer cell comprises introducing the recombinant RNA into the cell.
20. A method for transducing a target cell comprising contacting a target cell with the pseudotyped retrovirus of claim 1.
21. The method of claim 18 wherein the target cell is an insect cell, a bird cell, a fish cell or a mammalian cell.
22. The method of claim 19 wherein the target cell is a human cell.
23. The method of claim 18 wherein the cell is *in vivo*, *ex vivo*, or in cell culture.
24. The method of claim 18 wherein the selected biomolecule is a protein, and wherein the transduced target cell expresses the protein.
25. The method of claim 18 wherein the selected biomolecule is a bioactive RNA, and wherein the transduced target cell produces the bioactive RNA.